

### THREE NEW SPECIES OF *BONAMIA* THOUARS (CONVOLVULACEAE) FROM CENTRAL AUSTRALIA

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#### Summary

Three species, *Bonamia alatisemina*, *B. deserticola* and *B. erecta* are described as new.

In the first edition of the Flora of Central Australia (Jessop 1981), two taxa were described, *Bonamia* sp. aff. *B. linearis* and *B.* sp. aff. *B. oblongifolia*, which appeared at the time to be worthy of specific rank. Further studies and the availability of more recent collections have confirmed this opinion. In addition, a third species included under *B. rosea* in the Flora is described as new.

***Bonamia alatisemina*** R.W. Johnson, sp. nov. affinis *B. lineari* (R.Br.) H. Hallier, sed petiolis brevioribus, foliis angustioribus et seminibus anguste alatis. **Typus:** Western Australia: McLarty Hills, Great Sandy Desert, 8 Aug 1977, *A.S. George* 14727 (holo: PERTH; iso: BRI).

Planta perennis. Caules repentes, modice ad dense piliferi; pili bifurcati, brachiis appressis. Folia simplicia; lamina linearis ad peranguste ovata, acuta, basi angustata, 1.5-4 cm longa, 1.5-2.5 mm lata; petiolus minus quam 1.5 mm longus. Inflorescentia axillaris; pedunculus usque ad 1.5 mm longus, 1-florus; bracteolae oppositae, lineares, acutae, 1-3 mm longae, persistentes; pedicellus 3-6.5 mm longus. Sepala exteriora ovata ad ovato-elliptica, acuta vel vix obtusa, basi rotundata, 5-7.5 mm longa, 2.5-3.5 mm lata; interiora ovata ad ovato-acuminata, amplitudinis similis. Corolla infundibuliformis, erubescens, ca 10 mm longa, limbus ca 13 mm latus, taeniis meso-petalinis sericeis. Stamina 5, filamenta inaequalia, 3-4 mm longa, 4.5-5 mm supra basin corollae inserta. Ovarium ellipsoideum, 2-loculare; styli 2, 8-9 mm longi, 2 mm in parte inferiore connati, uterque stigmatibus globulari. Capsula ovoidea, basi styli persistenti, glabra vel ad apicem pilis paucis, 2-locularis, ca 6 mm alta. Semina 4, laevia, alis angustis, 2.5-3 mm longa.

Perennial plant with trailing branches, moderately to densely hairy; hairs biramous with appressed arms. Leaves simple; blade linear to very narrowly ovate, acute, tapering at the base, 1.5-4 cm long, 1.5-2.5 mm broad; petiole less than 1.5 mm long. Inflorescence axillary; peduncle up to 1.5 mm long, bearing 1 flower; bracteoles opposite, linear, acute, 1-3 mm long, persistent at fruiting; pedicel 3-6.5 mm long. Outer sepals ovate to ovate-elliptic, acute or barely obtuse, rounded at the base, 5-7.5 mm long, 2.5-3.5 mm broad; inner sepals ovate to ovate-acuminate of similar size. Corolla funnel-shaped, pale pink, ca 10 mm long, limb ca 13 mm broad, with hairy mid-petaline bands. Stamens 5; filaments unequal in length, 3-4 mm long, affixed 4.5-5 mm above the base of the corolla. Ovary ellipsoid, 2-locular; styles 2, 8-9 mm long, fused in the lower 2 mm, each with a globular stigma. Capsule ovoid with a persistent style base, glabrous or with a few hairs at the apex, 2-locular, ca 6 mm tall. Seeds 4, smooth, with a narrow wing, 2.5-3 mm long.

**Selected Specimens.** Western Australia. McLarty Hills, Great Sandy Desert, Aug 1977, *George* 14727 (PERTH, BRI); Anketell Ridge, Great Sandy Desert, May 1979, *Mitchell* 1122 (NT), *Mitchell* 1141 (NT). Northern Territory. The Granites tenements, Tanami Desert, Dec 1984, *Kalotas* 1691 (NT).

**Distribution:** An Australian endemic species, known only from the Great Sandy Desert in Western Australia and the Tanami Desert in the Northern Territory.

**Ecology:** It grows on sand plains.

**Flowering and Fruiting:** It flowers in the spring and early summer with fruit being produced into the late summer and autumn.

**Affinities:** It resembles most closely *Bonamia linearis* which is a mainly coastal and subcoastal species found across northern Australia from the Kimberley to Cape York Peninsula. It differs from *B. linearis* in having winged seeds and narrower leaves with shorter petioles.

**Bonamia deserticola** R.W. Johnson, *sp. nov.* affinis *B. oblongifoliae* Myint, sed pedicellis longioribus, sepalis et corollis magnis et floribus albis non caeruleis. **Typus:** Northern Territory: Lake Surprise Area, 10 Mar 1973, *N.M. Henry* 633 (holo: NT 38267; iso: NSW,CANB).

Planta perennis. Caules repentes, modice et dense piliferi; pili bifurcati, brachiis appressis. Folia simplicia; lamina oblonga ad ovato-oblonga, basi et apice obtusa ad abrupte acuta, 1–2.5 cm longa, 2.5–6 mm lata; petiolus 1–4 mm longus. Inflorescentia axillaris; pedunculus ± absens, flore solitaris; bracteolae oppositae, lineares, acutae, 1–2 mm longae, persistentes; pedicellus 2–5 mm longus. Sepala exteriora ovata, acuta, basin versus contracta, 4.5–6 mm longa, 2–2.5 mm lata; interiora ovata, acuminata, amplitudinis similis. Corolla infundibuliformis, alba, ca 5–7 mm longa, limbus ca 8–10 mm latus, taeniis meso-petalinis sericeis. Stamina 5; filamenta inaequalia, 3.5–5 mm longa, 1.5–2.5 mm supra basin corollae inserta. Ovarium ovoideum, 2-loculare; styli 2, 5–9 mm longi, 2–4 mm in parte inferiore connati, uterque stigmatibus globulari. Capsula ovoidea, basi styli persistenti, ad apicem coma, 2-locularis, ca 5 mm alta. Semina 4, glabra.

Perennial with trailing branches, moderately to densely hairy; hairs biramous with appressed arms. Leaves simple; lamina oblong to ovate oblong, obtuse to abruptly acute at both apex and base, 1–2.5 cm long, 2.5–6 mm broad; petiole 1–4 mm long. Inflorescence axillary; peduncle ± absent; bracteoles opposite, linear, acute, 1–2 mm long, persistent at fruiting; pedicel 2–5 mm long. Outer sepals ovate, acute, tapering towards the base, 4.5–6 mm long, 2–2.5 mm broad; inner sepals ovate, acuminate, of similar size. Corolla funnel-shaped, white, ca 5–7 mm long, limb ca 8–10 mm diameter, with a hairy mid petaline band. Stamens 5; filaments unequal, 3.5–5 mm long, affixed 1.5–2.5 mm above the base of the corolla. Ovary ovoid, 2-locular; styles 2, 5–9 mm long, fused in the lower 2–4 mm, each with a globular stigma. Capsule ovoid with a persistent style base, with a tuft of hairs at the tip, 2-locular, ca 5 mm tall. Seeds 4, glabrous.

**Selected Specimens.** Northern Territory. 65 m [105 km] NW of Willowra, Jul 1958, *Chippendale* NT 4794 (NT,NSW); 40 m [64 km] NW The Granites, Mar 1962, *Mahood* NT 8735 (NT); Lake Surprise Area, Mar 1973, *Henry* 633 (NT,NSW,CANB).

**Distribution:** An Australian endemic species currently known only from a restricted area in the vicinity of Lake Surprise and The Granites in the Northern Territory.

**Ecology:** It has been recorded from hummock grassland on deep red sands and from grey silty loams in dry depressions with *Eucalyptus papuana*.

**Flowering and Fruiting:** It flowers from spring to late summer with fruit being produced in the summer and autumn.

**Affinities:** It resembles most closely *B. oblongifolia* Myint which is known only from the type locality at Broome, Western Australia. It differs from *B. oblongifolia* in having longer peduncles, sepals and corolla. It has white flowers, not blue as in *B. oblongifolia*.

**Bonamia erecta** R.W. Johnson, *sp. nov.* affinis *B. roseae* (F.Muell.) H. Hallier, sed floribus et bracteolis parvioribus. **Typus:** Northern Territory: 8km E of Mt Olga circuit road, 30 Sep 1979, *R.W. Johnson* 3369 (holo: BRI 255233; iso: BRI, DNA).

Planta perennis. Caules erecti vel ascendentes usque ad 60 cm alti, lignescentes, dense coacti; pili bifurcati, brachiis ascendentibus. Folia simplicia; lamina oblonga, elliptica vel ovato-elliptica, obtusa vel rotundata, basi rotundata, 5–15 mm longa, 3–11 mm lata, utrinque coacta; petiolus absens vel raro usque ad 2 mm longus. Inflorescentia axillaris; pedunculus ± absens; bracteolae oppositae, peranguste triangulares ad lineares, acutae, 2–3 mm longae, persistentes; pedicellus usque ad 2 mm longus. Sepala exteriora, ovata ad ovato-lanceolata, acuta, basi obtusa ad rotundata, 5–6 mm longa, 2–3 mm lata, coacta; interiora ovata ad ovato-acuminata, longitudinis similis sed basi latiora. Corolla infundibuliformis, alba, 8–10 mm longa, limbus 10–12 mm latus, taeniis meso-petalinis sericeis. Stamina 5; filamenta ± aequilonga, 4.5–5 mm long, 3–4 mm supra basin corollae inserta. Ovarium ovoideum ad subglobosum, 2-loculare; styli 2, inaequilonga, 6–8 mm

longi, 4–5 mm in parte inferiore connati, uterque stigmatibus globulari. Capsula conica, ad apicem coma, 2-locularis. Semina 4, glabra.

Perennial with erect or ascending branches, to ca 60 cm tall. Branches becoming woody, densely felted with biramous hairs, arms ascending. Leaves simple; blade oblong, elliptic or ovate-elliptic, obtuse or rounded, rounded at the base, 5–15 mm long, 3–11 mm broad, densely felted on both sides; petiole ± absent, rarely to 2 mm. Inflorescence axillary; peduncle ± absent; bracteoles opposite, narrowly triangular to linear, acute, 2–3 mm long, persistent at fruiting; pedicel up to 2 mm long. Outer sepals ovate to ovate-lanceolate, ± acuminate, acute, base obtuse to rounded, 5–6 mm long, 2–3 mm broad, densely felted; inner sepals ovate to ovate-acuminate, of similar length but broader at the base. Corolla funnel-shaped, white, 8–10 mm long, limb 10–12 mm diameter, with a sericeous mid-petaline band. Stamens 5, filaments ± equal in length, 4.5–5 mm long, affixed 3–4 mm above the base of the corolla. Ovary ovoid to sub-globular, 2-locular; styles 2, unequal in length, 6–8 mm long, fused in the lower 4–5 mm, each with a globular stigma. Capsule conical, 2-locular with a tuft of hairs at the tip. Seeds 4, glabrous.

**Selected Specimens.** Northern Territory. 31.6 m [51 km] NW Mt Patricia, May 1958, *Chippendale* NT 4297 (NT,BRI); ca 2 m [3 km] E of Ayers Rock, Sep 1968, *Nicholls* 973 (NT,BRI); 100 m [161 km] W of Ayers Rock, Sep 1979, *Maconochie* 742 (NT, PERTH); Between Hermannsburg Mission and Arcyonga, 35 km from Hermannsburg, Sep 1979, *Johnson* 3358 (BRI,NT); 8 km E of Mt Olga Circuit Rd, Sep 1979, *Johnson* 3369 (BRI,NT). South Australia. FAR NORTH WEST: Musgrave Ranges, ca 65 km W of Musgrave Park, Sep 1963, *Whibley* 973 (AD), *Eichler* 17295 (AD). Western Australia. 5 m [8 km] W of Mt Webb, Jul 1967, *George* 9032 (NT,PERTH).

**Distribution:** An Australian endemic species, occurring throughout the desert regions of the Northern Territory, Western Australia and South Australia.

**Ecology:** It occurs on red and yellow sand plains and dunes in hummock grasslands (*Triodia pungens*), often with an overstorey of *Acacia* spp. and *Casuarina decaisneana*.

**Flowering and Fruiting:** It flowers in the spring and produces fruit in the autumn. No collections have been made in the summer.

**Affinities:** It is most closely related to *Bonamia rosea* (F.Muell.) H. Hallier which is found in coastal Western Australia. It differs from *B. rosea* in having smaller bracteoles and corolla.

### References

JESSOP, J. (1981). Flora of Central Australia. Sydney: A.H. & A.W. Reed.